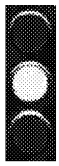
Operational FQT Report : 11-Dec-2014
PARAMOUNT HALIFAX (9453987)



Summary

Based on the Aluminium + Silicon result(s), operational difficulties may be experienced. Please refer to the operational advice on the next page for more information.

Please take note of the precautions on the next page related to the fuel quality trend of the past four bunker samples

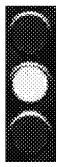
Sample Number	HOU1430061	**Customer**	ENTERPRISES SHIPPING AND TRADING SA
Product Type	(HFO)	**Seal Data**	VPS, SEAL INTACT, 7986806
Bunker Port	LAKE CHARLES		
Bunker Date	08-Dec-2014	**Related Samples**	
Sampling Point	SHIP MANIFOLD	**Supplier**	7986807
Sampling Method	CONTINUOUS DRIP	**Ship**	7986808
Sent From	LAKE CHARLES, LOUISIANA	**SHIP MARPOL**	7986809
Date Sent	09-Dec-2014	**MARPOL**	36831380
Arrived at Lab	10-Dec-2014		
Supplier	PENINSULA		
Loaded From	BUFFALO 250		
Quantity per C.Eng.	1280		

Receipt Data

Source Of Data	B.D.N.		**Sulfur**	2.35	% m/m
Density @ 15°C	990.3	kg/m³	**Volume @ 60°F**	7850.000	bbl
Viscosity @ 50°C	319.9	mm²/s	**Quantity**	1234.000	MT

Fuel Quality

Current	Trend	Parameter	LAKE CHARLES 08-Dec-2014	FUJ1412434 GIBRALTAR 16-Sep-2014	FUJ1412433 GIBRALTAR 16-Sep-2014	HOU1420090 OFF US GULF 10-Aug-2014	Unit
		Density @ 15°C	**988.2**	990.8	990.6	989.9	kg/m³
		Viscosity @ 50°C	**343.8**	347.1	366.9	200.2	mm²/s
		Water	**0.11**	0.06	0.01	0.15	% V/V
		Micro Carbon Residue	**11.00**	15.51	14.54	10.36	% m/m
		Sulfur	**2.17**	2.32	0.95	0.99	% m/m
		Total Sediment Potential	**0.02**	0.02	0.01	0.05	% m/m
		Ash	**0.06**	0.06	0.04	0.04	% m/m
		Vanadium	**140**	154	29	33	mg/kg
		Sodium	**11**	23	30	21	mg/kg
		Iron	**27**	45	22	24	mg/kg
		Nickel	**45**	46	55	20	mg/kg
		Calcium	**12**	3	3	12	mg/kg
		Magnesium	**2**	1	LT 1	2	mg/kg
		Zinc	**3**	2	2	2	mg/kg
		Phosphorus	**2**	2	6	3	mg/kg
		Potassium	**2**	LT 1	LT 1	6	mg/kg
		Pour Point	**LT 24**	LT 24	LT 24	LT 24	°C
		Flash Point	**GT 70.0**	GT 70.0	GT 70.0	GT 70.0	°C
		Aluminium + Silicon	**45**	17	38	53	mg/kg
		CCAI (Ignition Quality)	**850**	853	852	858	-
	Reported problems with fuel			No	No	No	



Other Parameters

Parameter	Result	Unit
Acid Number	0.3	mg KOH/g

Operational Advice :

▭	Fuel contains abrasive contaminants as indicated by Aluminium + Silicon. Efficient centrifuging of the fuel is most important in order to reduce the abrasive contaminant to an acceptable level. Maintain fuel temperature at 98°C at separator inlet and use reduced flow rate. Consider to operate separators in parallel. Please refer to manufacturers instructions for further information. Based on Aluminium + Silicon content, we recommend to send a set of FSC samples to assess the efficiency and confirm optimum operation of the fuel treatment plant. As a minimum, representative samples taken before and after the separators are required for this assessment. Red labels should be used for the FSC samples. Please refer to the Instruction Manual included in the sample kits for more detailed information.
△	Noticeable amount of abrasive contaminants as indicated by Aluminum + Silicon can accumulate in the tanks onboard also for fuels within specification. It is recommended that tanks and filters are frequently drained to avoid carry over to the engine. We also recommend that samples are taken regularly before and after centrifuge to check centrifuge efficiency (Fuel System Check testing).
	Approximate fuel temperatures: Injection: 140°C for 10 mm²/s 125°C for 15 mm²/s 115°C for 20 mm²/s 105°C for 25 mm²/s Transfer : 40°C

VPS Colour Code used :

✔ Satisfactory ▭ Caution ✘ Use of fuel not recommended △ Fuel Trend

Note:
LT means Less Than, GT means Greater Than.
Quantity (Weight) is based on BDN Volume, VPS Density and a weight factor of 1.1 kg/m³ (ASTM D1250-80 Table 56).

Best Regards,
On behalf of Veritas Petroleum Services BV
Qamar Hussain
Technical Adviser

End of Report for PARAMOUNT HALIFAX

For technical or operational advice or further information on this report please contact your nearest VPS office or contact us directly at Tel : +1 (281) 470 1030 Email : Houston@v-p-s.com